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INFANTILE TYPHOID

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Infantile typhoid is not uncommon. It probably is more frequently met with than is generally supposed, as the clinical manifestations are peculiar to this particular age and the diagnosis is not easily made. "The gross lesions are referable to the intestinal canal but they are to be looked upon merely as local expressions of a general infection. This is of important therapeutic value as it directs our attention to the individual as a whole and spares us useless effort to medicate the intestinal canal, in the hope of curing the disease."

As in the adult we are dealing with a self-limited disease, the cure of which depends on "the elimination of the specific bodies, or definite bacterium—the *bacillus typhosus* of Eberth, by the tissue cells of the patient." This does not mean that we cannot influence the course of the disease. On the contrary skilled care, conscientious watchfulness, competent nursing, and the application of definite measures to the relief of symptoms and complications has greatly lowered the mortality and apparently shortened the course of the disease to ten days or sometimes less; in many cases however it may run a course of several weeks, typical of the adult type.

Continued fever in infancy with gastro-intestinal symptoms and a slight rash should cause us to suspect typhoid. Small rose-colored spots seen on the thorax and abdomen, which disappear on slight pressure with the finger-tip, are similar to the eruptive manifestation in the adult. These spots appear in crops lasting three to six days, occasionally they are seen after the tenth day.

When suspicion is aroused as to the probability of typhoid, the infant must be put to bed and kept there until the physician arrives. He must not be permitted to waste his precious strength while one is awaiting the development of more diagnostic symptoms or the result of blood examinations.

The Blood.—"There is a marked diminution in the number of leucocytes, hence leucopaenia may be looked upon as a symptom of typhoid. The white blood-cell count is frequently as low as 4000," the normal during infancy, as we all know, being between 7000 and 8000. This has been proven, by statistics, to be absolutely pathognomonic of typhoid, and ranks with the Widal reaction.

The Widal Reaction.—"The Widal reaction is negative early in the disease, and appears after the first week, or usually at the beginning of the second. A positive Widal reaction in a dilution of 1-20 means typhoid."

Special Symptoms.—Infantile typhoid has no characteristic stool. The stool *per se* is not uniform in all cases and does not show the characteristic appearance so often described of the adult stool. It is, however, more frequently diarrhoeal than constipated, probably depending on the diet. In some cases it is yellowish, lumpy and malodorous. Other children have mucus and jelly-like masses with shreds resembling membranes; while still others have a greenish-black liquid stool. It frequently is lienteric the first few days, showing the evidence of intestinal indigestion. The abdomen is markedly distended and tympanitic on percussion.

The infant is very thirsty, but frequently refuses food. Vomiting sometimes occurs. The tongue is thickly coated with a grayish or whitish fur. The edge of the tongue is clean and shows enlarged swollen papillae. Severe cases show a very dry and glossy tongue. The lips are dry, the mouth is dry, and water is eagerly taken.

The urine will be found to contain urates and phosphates. The effect of the typho-toxine gives rise to an acute renal congestion, then we have albumin, hyaline casts, leucocytes, and some red blood-cells present. A positive Diazo reaction of the urine strengthens the diagnosis of typhoid early in the disease. The careful nurse will always remember to watch for a secondary nephritis.

The Heart and Lungs.—"Early in the disease no special cardiac symptoms exist, weakened or muffled heart sounds are usually noted late in the disease, especially if severe toxaemia exists. A systolic murmur is heard in every severe case of typhoid."

If the pulse-respiration ratio of 4 to 1 is disturbed, then pulmonary complication should be suspected and promptly reported.

The Temperature.—We do not have the characteristic step-ladder type of fever so commonly seen in adults. In the case described there was an irregular febrile curve.

I am indebted to Dr. Louis Fischer for the opportunity of studying the bed-side notes of the following case:

E. K., 8 months old, was admitted to hospital service on the fifth day of illness. The temperature on admission was 103 degrees F. A roseolar eruption on the thorax and abdomen, with the history of an irregular fever, led to a suspicion of typhoid. The blood was examined and gave a positive Widal reaction, the urine a positive Diazo reaction. The child had been fed cows' milk, Grade A.

There was no bowel movement on the day of admission. A teaspoonful of castor oil was given. This produced a greenish-yellow and malodorous stool mixed with jelly-like mucus. The lower bowel was emptied daily, each morning thereafter, with an irrigation of chamomile infusion (one teaspoonful of chamomile flowers to one quart of boiling water). As a small yellowish liquid stool usually followed the injection within six to eight hours, the upper bowel, the seat of the lesion, was not disturbed. While the temperature remained over 102 degrees F., modified Ziemssen tub baths were given every two hours. The water warmed to 90 degrees was gradually cooled to 70 degrees, by adding cold water while the infant was in the bath. These baths lasted three minutes, with friction of the arms, legs, and back, carefully avoiding the abdomen.

In order to dilute the toxine and to stimulate the secretion of urine, five minim doses of sweet spirits of nitre were given every two hours when necessary. The tongue, which was thickly coated with a whitish fur, was scraped with a narrow whalebone, the gums and inner cheeks were medicated with equal parts of saturated boric acid solution and glycerine, applied by means of cotton swabs mounted on applicators.

On the seventh day of illness, as the rash on the abdomen was fading, a second eruption appeared, lasting three more days. The usual precautions were taken to guard against bedsores. Moisture around the buttocks was quickly removed, the parts sponged with alcohol or alcohol and water equal parts. When the buttocks had been soiled a mild antiseptic solution, usually phenol (carbolic acid), 1 to 40, was used. When pressure marks were noted, the skin was rubbed to improve the circulation, the parts then being dusted with a zinc and talcum drying powder. The position of the patient was changed frequently, not only to avoid bedsores, but to lessen the chance of hypostasis in the lungs.

Sponge baths were given for restlessness and sleeplessness. Flatulence was relieved by powders containing salol one grain, and bismuth, one-half grain, every two hours when necessary, and by the daily chamomile injections. When the tympanites was severe a soft, pliable rubber catheter, carefully introduced a few inches through the rectum, usually afforded relief within a few minutes.

Isolation, and disinfection of stools, urine, bath water, bed linen, etc., was carried out according to the rules of the hospital. All the sunshine possible and abundance of fresh air were given from the onset, and as soon as the tub baths could be discontinued, the infant was placed in a window crib, the open piazza being prohibited on account of the isolation.

The diet consisted of certified milk five ounces, water three ounces, milk sugar one-half drachm, given every four hours. At any sign of gastro-intestinal disturbance the quantity was diminished, the patient's appetite being the guide. Water was given *ad libitum* to improve the condition of the mouth, to lessen the constipation, and to stimulate the function of the kidneys and skin. The fever ran an irregular course for nine days, then remained normal.

On admission to the hospital the infant weighed 17 pounds. During the first nine days of illness one pound and four ounces were lost. After the temperature became normal, one drachm of milk sugar and one drachm of cream were added to each feeding of whole milk five ounces, and water three ounces. The infant was discharged at the end of twenty-five days weighing sixteen and one-half pounds.

Research has taught us that typhoid is conveyed through food, especially through milk and water. The infant diet being restricted almost exclusively to milk and water, the source of the infection will not be hard to trace; however, flies and the "human carrier" may frequently share the responsibility.

The necessity for the early diagnosis of infantile typhoid is apparent when we consider the necessity for the use of napkins to catch all excreta. The handling or disposing of these numerous napkins is no easy matter, as some patients harbor for weeks and months the virulent bacilli in the urine, and more commonly in the feces. The ideal method of disposing of these infected napkins is by incineration.

An interesting sequel of the case reported, occurred one week after the infant was returned to its home. An older brother, about seven years of age, vomited, had fever, and complained of headache. The blood examination gave a positive Widal reaction. The boy passed through the usual cycle of symptoms and recovered.

"It is to be hoped that just as the Board of Health now demands to know whether the Klebs-Loeffler bacillus is absent from the secretions of diphtheria patients, it will also demand to know whether the excreta of a typhoid fever patient are free from bacilli before he is allowed the freedom of the community."

I know of no reported cases of "infantile carriers" and in the cases personally observed it has been impossible to procure the coöperation of the mother for the repeated examinations necessary before the certainty of a case is assured.

TRACHOMA

By Florence R. Pond
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Trachoma, a word meaning rough, is a contagious disease, which affects the conjunctiva, the lining membrane of the eye. It occurs in warm climates, especially among people of the poorer classes, where the housing and sanitary conditions are bad. The ill-nourished and under-fed come under its ravages oftener than those in the better districts, though it is by no means confined to them. Persons of early or middle life are more likely to have the disease than old people, and babies seldom get it. No one knows what germ causes the disease, but the general opinion is that it is a double coccus, much smaller than the gonococcus, called the trachoma body, however, they do not feel sure it is this which causes it, for the germ is found in vernal catarrh and in follicular conjunctivitis.

At first the granules are distinct, but they spread and multiply rapidly. They are rough, which gives the name to the disease. The illness comes on so insidiously and slowly that the patient is almost unaware of it until he notices an irritation, as if a foreign body were under the eyelids, and upon going to a doctor and having them everted, a mass of distinct granules is found. During this stage of the disease